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Docket 82678AF-P
Customer No. 01333

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of
David L. Patton, et al

AUTHENTICATION USING
NEAR-FIELD OPTICAL
IMAGING

Serial No. 09/957,011
Filed September 20, 2001

Group Art Unit: 3722
Examiner: Willmon Fridie, Jr.

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APPEAL BRIEF TRANSMITTAL

Enclosed herewith in triplicate is Appellants' Appeal Brief for the above-identified application.

Applicant hereby requests reinstatement of the Appeal. This Brief is being filed in response to the Official Action dated January 12, 2005 and takes the place of the previously filed Appeal Brief submitted September 17, 2004.

The Commissioner is hereby authorized to charge any fees for the Appeal Brief filed herewith to Eastman Kodak Company Deposit Account 05-0225. A duplicate copy of this letter is enclosed.

Respectfully submitted,

Frank Pincelli
Attorney for Appellants
Registration No. 27,370

Frank Pincelli/phw
Telephone: 585-588-2728
Facsimile: 585-477-4646
Enclosures

If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.



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APPEAL BRIEF PURSUANT TO 37 C.F.R. 1.192



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APPELLANT'S BRIEF ON APPEAL

Appellants hereby appeal to the Board of Patent Appeals and Interferences from the Examiner's Final Rejection of claims 1-3, 5 and 7 which was contained in the Office Action mailed April 6, 2004. An Official Action dated January 12, 2005 was issued wherein the prosecution of the application was reopened and new grounds of rejection was recited against the claims which required the necessity of filing this new appeal brief.

A timely Notice of Appeal was mailed on July 21, 2004.

Real Party In Interest

As indicated above in the caption of the Brief, the Eastman Kodak Company is the real party in interest.

Related Appeals And Interferences

No appeals or interferences are known which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

Status Of The Claims

Appendix I provides a clean, double spaced copy of the claims on appeal.

Status Of Amendments

All amendments have been entered and the claims stand as indicated in Appendix I.

Summary Of The Invention

The present invention is directed to a product and method of making same wherein a plurality of micro discrete continuous tone images (30, 32,34) are placed on a product using near-field optics, the continuous tone image each having a size no greater than about 20 microns. See Figures 1a, 1b, 1c and 1d.

Issues For Review By The Board

The following issues are presented for review by the Board of Patent Appeals and Interferences:

1. Whether claims 1-3, 5 and 7 are unpatentable under 35 USC § 103(a) over U.S. Patent 5,904,375 to Brugada in view of U.S. Patent 6,396,789 B1 to Guerra et al.
2. Whether claims 1-3, 5 and 7 are unpatentable under 35 USC § 102(e) as being anticipated by Naya et al.

Grouping Of Claims

- | | |
|----------|---|
| Group I: | Claims 1-3 and 5 stand or fall together as a group. |
| Group II | Claim 7 stands or falls together as a group. |

Arguments

The Rejection

Group I: Claims 1, 2, 3 and 5

- A. The Examiner, in the Official Action dated January 12, 2005 rejected claims 1-3, 5 and 7 under 35 USC § 102(e) as being unpatentable over Naya et al.

Claims 1 and 5 are independent method claims directed to a method of making a continuous tone image on a photosensitive media. Both independent claims 1 and 5 include the limitation of producing the continuous tone image using near-field imaging optics/device or device wherein the image that is formed is no greater than about 20 microns. Claims 2 and 3 depend at least ultimately upon independent claim 1 and provide further description of the size of the image.

The Examiner has argued that Naya et al. disclosed the method and all the subject matter as set forth in the claims and is identical to the invention as broadly recited. The Examiner further stated "Some of the claimed elements clearly disclosed by the reference are: a discrete continuous tone image formed

by near field optics on a photosensitive media” wherein the Examiner relies at column 3, lines 58-65. The Examiner further recites column 4, lines 27-30 that the continuous image is less than .015mm and no greater than 10 or 20 microns.

Applicant would respectfully submit that the Naya et al. reference does not teach or suggest disclosing discrete continuous tone images as taught and claimed by Applicant. In this regard, an “image” as defined by Webster’s II New College dictionary is: “A reproduction of the form of someone or something, esp. a sculptured likeness. 2. An optically formed duplicate, counterpart, or other representative reproduction of an object, esp. an optical reproduction of an object by a mirror or lens”. Thus it is clear that an “image” is not simply a line or mark but a reproduction of someone or something. The Naya et al. reference does not teach or suggest providing an image. In particular, the references cited by the Examiner talked about a pattern having a line width. A line width is not an image in the context to what the present invention is directed. In particular, Applicants refer to the specification at page 4, lines 26-31 and figures 1b, 1c and 1d of providing examples of a continuous tone image. As can be clearly seen, these images are not lines but reproductions of something or someone. Thus the lines as described and disclosed in the Naya et al. reference totally fail to meet the limitation of providing images taught and claimed by Applicant.

Furthermore, the claim specifically sets forth that the image is a “continuous tone” image. A “continuous tone” image is an image having varying shades and/or colors. There is no teaching or suggestion that the line of Naya et al. can or should produce any variation in shade or color. Again, the clear understanding of tone in the context of the present invention can be found in Webster’s II New College Dictionary in definition 7. that states “A color or shade of color. B. Quality of color”. This is consistent with the description as set forth in the present application. Again reference is made to page 4, lines 28-30 of the present application. There is no teaching or suggestion providing a continuous tone line in the Naya et al. reference. The passage at page 4 lines 27-30 of Naya is simply directed to a fine pattern that is produced by the lines. Applicant respectfully submits that the Naya et al. reference teaches away from the claimed invention as Naya et al. is directed to a fine pattern forming method for use in the

photolithography process. The present invention is directed to producing extremely small images. In the photolithography process, there is producing a plate for producing large scale type images, whereas the present invention is directed to producing extremely small "continuous tone images". Accordingly, it is respectfully submitted that the Naya et al. reference could not teach or suggest the invention as taught and claimed by Applicant.

B. The Examiner, in the Official Action dated April 6, 2004 rejected claims 1-3 and 5 under 35 USC § 103(a) as being unpatentable over Brugada in view of Guerra et al.

The Examiner cited Brugada as disclosing a micro discrete continuous tone image of the claims except for the image formed by near-field optics. In this regard Applicant respectfully submits that the Examiner is incorrect. The Brugada reference discloses providing of security microdot pattern on documents to prevent falsification of the documents. First, Brugada does not teach or suggest putting on a photosensitive media as taught and claimed by Applicant. In particular, Brugada discloses the use of an ink for producing the micro pattern (see Abstract lines 4-9; column 2, lines 29-31; column 2, line 42; column 2, lines 60-61; column 3, lines 13-14; column 4, line 31 and in the claims). It is quite evident that the microdots of Brugada are formed by inks. This is in contrast to the present invention which specifically describes providing continuous tone images on a photosensitive media. In the present invention the images are formed by a totally different technique. In particular, the use of dyes in a photosensitive media and the exposure to light for forming the images thereon. Thus, the Brugada reference fails to teach or suggest one of the claimed aspects of the present invention of forming an image on a photosensitive media.

Secondly, Brugada does not teach or suggest providing a continuous tone image. Quite the contrary, they talk about providing microdot patterns. Thus, there is no teaching or suggestion of providing a continuous tone image as also taught and claimed by Applicant. Further, the images in Brugada can be seen by a simply viewing through a magnifying glass. As set forth at column 3, lines 33-35, a simple magnifier will readily allow detection of the microdots. This is in

contrast to the present invention where the micro continuous tone images are designed not to detract from the original printing. See page 4, lines 25-27 of the present application.

In the present invention the claimed size of the continuous tone image is less than about .015 mm. **Substantially smaller than suggested by Brugada.** The Brugada reference is further distinguishable in that the technique for providing the images of the present invention is distinct from the Brugada reference. The providing of micro discrete continuous tone images as claimed by Applicant is enabled by using near-field optics as set forth in the independent claims. Brugada could not teach or suggest the present invention as the physics of the image formation mechanism in the Brugada reference is entirely different from the near-field optics set forth in the present invention. The resolution of the image formed by near-field optic technology was not anticipated or suggested by classical optics utilized in Brugada where the resolution is limited by the physical diffraction theory. The use of near-field optics technology, as set forth in the independent claims, allows for the formation of images with resolutions that far exceed the limits of printing systems as disclosed in Brugada.

Applicant respectfully submits that the Brugada reference is deficient in many respects from that of the claimed invention.

The Examiner relies on Guerra et al. for supplying the missing features of the claimed invention. Applicant respectfully submits that the Guerra et al. reference fails to teach anything that would render Applicant's invention obvious. First, the Guerra et al. reference simply discloses the use of near-field optics for providing of data which typically takes the form of optical data which are super resolution spots. See column 5, lines 13-21 and column 8, lines 46-47. There is no teaching or suggestion of providing a continuous tone image in Guerra et al. The Guerra et al. reference is directed to simply providing of data for storage and retrieval. Thus, even if one were to attempt to combine Guerra et al. with Brugada, it still would lack the claimed invention.

Further, there is no teaching or suggestion in either of the references that would lead one of ordinary skill in the art to combine the references. As the CAFC has stated in *In re Lee* 277 Fed 3rd 1338 (61 USPQ 2nd 1430) at page 1433:

“When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness ... it must be based on objective evidence of record ... Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references ...there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant.”

Applicant respectfully submits that there is no teaching or suggestion in either of the references for making the combination as taught and claimed by Applicant. First, as previously discussed, the Brugada reference is directed to providing images using inks onto a media, whereas the Guerra et al. reference is directed to using near-field optics to provide data on a medium. The two are directed to two totally distinct and apart technologies. In the Brugada reference, microdots are provided by the use of inks, whereas the near-field optics of the Guerra et al. reference is used to provide data onto an optical element. The Brugada reference is directed to providing a support to prevent falsification of documents printed on the support, whereas Guerra et al. is directed to a system for storing and retrieving of data on an optical medium. Clearly there is no teaching or suggestion in any of the references for making the combination suggested by the Examiner.

Further, even if the combination were to be made, the references clearly do not teach the suggestion of providing continuous tone images that are less than .015 mm in size as taught and claimed by Applicant.

In view of the foregoing, Applicant respectfully submits that claims 1, 2, 3 and 5 are patentably distinct over the cited references.

Group II: Claim 7

- A. The Examiner, in the Official Action dated April 6, 2004 rejected claim 7 under 35 USC § 103(a) as being unpatentable over Brugada in view of Guerra et al.

Claim 7 is directed to a product having a plurality of micro discrete continuous tone images placed thereon by using near-field optics wherein the continuous tone image has a size no greater than about 20 microns. In neither of the cited references does it teach or suggest providing of a product as taught and claimed by Applicant. The Brugada reference does not teach or suggest a product having micro discrete continuous tone images. As previously discussed, there is simply provided micro dots on a substrate. Furthermore, these micro dots do not have a size as small as taught and claimed by Applicant nor are they formed by near-field optics as taught and claimed by Applicant. Thus, the product of claim 7 is clearly not taught or suggested by Brugada. The Guerra et al. reference, as previously discussed, simply discloses providing data on an optical medium. Again, there is no teaching or suggestion of providing a continuous tone image of the size taught and claimed by Applicant. Accordingly, in view of the foregoing, Applicant respectfully submits that the cited art does not teach or suggest the invention as currently set forth in independent claim 7.

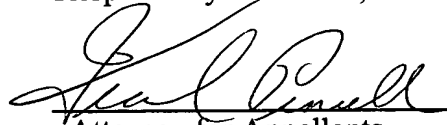
Summary

Applicant respectfully submits the present invention is patentably distinct over the cited prior art.

Conclusion

For the above reasons, Appellants respectfully request that the Board of Patent Appeals and Interferences reverse the rejection by the Examiner and mandate the allowance of the Claims.

Respectfully submitted,



Attorney for Appellants
Registration No. 27,370

Frank Pincelli/phw
Telephone: 585-588-2728
Facsimile: 585-477-4646
Enclosures

Appendix I - Claims on Appeal

1. A method of making a continuous tone image, comprising the steps of:

making at least one micro discrete continuous tone image on a photosensitive media wherein said discrete continuous tone image is formed on a photosensitive media capable of producing a continuous tone image using near-field optics, said continuous tone image being less than about .015 mm.

2. A method according to claim 1 wherein said micro discrete continuous tone image has a size no greater than about 20 microns.

3. A method according to claim 2 wherein said continuous tone image has a size no greater than about 10 microns.

5. A method of making a discrete micro continuous tone image on a photosensitive media, comprising the steps of:

providing a photosensitive media capable of producing an continuous tone image thereon using a near-field imaging device; and

forming a continuous tone image on said media, said micro discrete continuous tone image being no larger than about 20 microns.

7. A product having a plurality of micro discrete continuous tone images placed thereon by near-field optics, said continuous tone image each having a size no greater than about 20 microns.

Riverside



Webster's II New College Dictionary

MORE THAN 200,000 clear, concise definitions

THOUSANDS of examples of words in actual use

NEW ENTRIES from *acupressure* to *Z particle*

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-treat (*tī'trēt'*) vt. -**treat-ed**, -**treat-ing**, -**treats**. To **treat**. To **treat-ment** n.
-illuminate (*i-lū'mīnāt'*) vt. -**lumed**, -**lum-ing**, -**lumes**. [Short for ILLUMINE.]
vt. to illuminate.
-illumination (*i-lū'ō mā-nā'shun*) n. ILLUMINATION 7.
-luminescence (*i-lū'ō mā-nā'shun*) n. Something that emits light.
-luminate (*i-lū'ō mā-nā'tē*) v. -**nated**, -**nating**, -**nates**.
To **illuminate**; **illuminate**: *in-* + **illuminate**, to light up or **illuminate**.
1. To supply or brighten with light. 2. To decorate or hang lights. 3. To make understandable: CLARIFY. 4. To enlighten intellectually or spiritually: EDIFY. 5. To endow with splendor or fame: GLORIFY. 6. To adorn (eg., a book page) with decorative designs, ornaments, or lettering in bright colors or precious metals. 7. To reveal by or expose to radiation. — vi. 1. To become lighted: GLOW. 2. To be revealed by or exposed to radiation. — n. (-nit). One who has or purports to have a high degree of enlightenment.
-illuminati (*i-lū'ō mā-nā'tē*) pl. n. [Lat., pl. of *illuminatus*.] Persons claiming to illuminate; illuminators. 1. Persons claiming to be highly enlightened with respect to some subject. 2. Illuminati. Any of various groups claiming special religious enlightenment.
-illumination (*i-lū'ō mā-nā'shun*) n. 1. An act of illuminating or being illuminated. 2. A source of light. 3. Lighting used as decoration. 4. Spiritual or intellectual enlightenment. 5. Clarification or illumination. 6. The art or act of adorning a text, page, or initial letter with decorative designs, miniatures, or lettering. 8. An example of this art. 7. Physics. The luminous flux per unit area at any point on a surface exposed to incident light.
-illuminate (*i-lū'ō mā-nā'tiv*) adj. Of, producing, or capable of producing illumination.
-illuminate (*i-lū'ō mā-nā'ter*) n. 1. One that illuminates. 2. A person for producing, concentrating, or reflecting light. 3. One who illuminates manuscripts or other objects.
-illumine (*i-lū'ō min*) vt. -**minded**, -**min-ing**, -**mines**. [ME *illuminare* < Lat. *illuminare*, to illuminate.] To give light to : ILLUMINATE.
-illuminate (*i-lū'ō min*) adj.
-illumination (*i-lū'ō mā-nā'tiv*) n. 1. Belief or proclamation of a special personal enlightenment. 2. Illuminationism. The principles and ideas of various groups of Illuminati. — **illuminist** n.
-illuminate (*i-lū'ō mā-nā'tiv*) vt. -**used**, -**using**, -**uses**. To maltreat. — n. (*i-lū'yōus*) also **ill-us-age** (*yōō'sij*, -zīj). Bad or unjust treatment.
-illusion (*i-lū'ō zhā'n*) n. [ME < OFr. < LLat. *illusio* < Lat., a mock play, irony < *illusus*, p.part. of *illudere*, to mock : *in-*, against + *ludere*, to play.] 1. a. A mistaken perception of reality. b. A mistaken belief or concept. 2. The condition of being deceived by an erroneous belief or perception. 3. Something, as a fantastic desire or plan, that causes an erroneous perception or belief. 4. ILLUSIONISM 2. 5. A fine transparent cloth used for dresses or trimmings. — **il-lu'sion-al**, **il-lu'sion-ary** adj.
-illusionism (*i-lū'ō zhā-niz'm*) n. 1. The doctrine stating that the material world is an immaterial product of the senses. 2. Use of illusionary devices and techniques in art or decoration. — **il-lu'sion-istic** adj.
-illusionist (*i-lū'ō zhā-nist*) n. 1. An adherent of the doctrine of illusionism. 2. A magician or ventriloquist. 3. An artist whose work is characterized by illusionism.
-il-lu-sive (*i-lū'ō sīv*) adj. Of, relating to, or like an illusion: IL-LUSTRIOUS. — **il-lu'sive-ly** adv. — **il-lu'sive-ness** n.
-illusory (*i-lū'ō sā-rē*, -za-rē) adj. Produced by, based on, or having the nature of an illusion.
• **Syns:** ILLUSORY, DELUSIVE, DELUSORY ILLUSORY adj. core meanings: tending to deceive <illusory hopes>
-illustrate (*i-lū's-trāt'*, -tūs'trāt') v. -**trated**, -**trating**, -**trates**. [Lit. *illustrare*, *illustrat*: *in-* + *illustrare*, to make bright or lustre, purification.] To **v.** 1. a. To clarify, as by using examples or making comparisons. b. To clarify by serving as an example or comparison. 2. To provide (a publication) with explanatory or decorative features. 3. Obs. To illuminate. — vi. To present a clarification, example, or explanation. — **il'lus-tra-tor** n.
-illustration (*i-lū's-trā-shən*) n. 1. An act of clarifying or explaining or the state of being clarified or explained. 2. Something used to clarify or explain. 3. Visual matter for clarifying or decorating a text. — Obs. Illustration. — **il'lus-tra-tion-al** adj.
-illustrative (*i-lū's-tra-tiv*, -tūs'trāt'iv) adj. Acting as an illustration. — **il-lus'tra-tive-ly** adv.
-illustrious (*i-lū's-trē-əs*) adj. [*<* Lat. *illustris*, distinguished, bright < *illustrare*, to illustrate.] 1. Renowned or celebrated. 2. Obs. Shining brightly. — **il-lus'trious-ly** adv. — **il-lus'tri-ous-ness** n.
-illuviate (*i-lū'ō vē-āt'*) vi. -**ated**, -**ating**, -**ates**. [*<* Backformation < ILLUVIATION.] To undergo illuviation.
-illuviation (*i-lū'ō vē-ā'shun*) n. (IL + (AL)LUV(IUM) + -ATION.) The deposition in an underlying soil layer of colloids, soluble salts, and mineral acids.

I will *n.* Unfriendly feeling: ENMITY.
I-ly (i'l'le) *adv.* Badly: ill.
I-lyr-i-l' (i-lir'e-an) *n.* 1. One of a people inhabiting ancient Illyria.
 2. The Indo-European language of the Illyrians. — *adj.* Of, relating to, or typical of the Illyrians or their language.
I-men-i-te (i'l'mə-nit') *n.* [G. *Ilmenit*, after Ilmen, a range in the Ural Mountains, where it was first found.] A lustrous black-to-brownish titanium ore, chiefly FeTiO₃.
I-lo-ca-no *also* **I-lo-ka-no** (ē'lō-kā'nō) *n., pl.* **Ilocano** *also* **Ilokan or **-nos**. [Sp. *Ilocano* < *Iloko*, a Malayan people in the Philippines.] 1. One of a people inhabiting northwestern Luzon, Philippines. 2. The Austronesian language of the Ilocano. — *adj.* Of, relating to, or typical of the Ilocano or their language.
I'm (im). I am.
I-m' *pref. var. of* IN-1. — Used before *b. m.* and *p.*
I-m-ge *pref. var. of* IN-1. — Used before *b. m.* and *p.*
Im-age (im'ij) *n.* [ME < OFr. < Lat. *imago*.] 1. A reproduction of the form of someone or something, esp. a sculptured likeness. 2. An optically formed duplicate, counterpart, or other representative reproduction of an object, esp. an optical reproduction of an object by a mirror or lens. 3. A close or exact resemblance to another: DOUBLE. 4. a. The idea of someone or something that is held by the public. b. The character projected by someone or something to the public, esp. by the mass media: REPUTATION. 5. A personification of something specified <You are the image of happiness.> 6. A mental picture of something unreal or not present. 7. a. A vivid description or representation. b. A figure of speech. 8. Obs. An apparition. 9. *Math.* A set of values of a function corresponding to a particular subset of a domain. 10. *Computer Sci.* An exact duplication of data in a file onto another medium. — *vt.* **-aged, -ag-ing, -ag-es**. 1. To make a likeness of. 2. To reflect. 3. To symbolize or typify. 4. To picture mentally: IMAGINE. 5. To describe, esp. to describe so vividly as to call up a mental picture of. 6. *Computer Sci.* To translate (pictures) by computer into numbers that can be transmitted to and reconverted into pictures by another computer. 7. To visualize, as by magnetic resonance imaging.
image **orthicon** *n.* An orthicon.
im-age-ry (im'ij-rē) *n., pl. -ries*. [ME *imagerie* < OFr. < *image*, image.] 1. Mental pictures or images. 2. a. The use of vivid descriptions or figures of speech in speaking or writing to produce mental images. b. A metaphoric representation, as in music, art, or drama. 3. a. Representative images, esp. statues or icons. b. The art of making such images.
I-mag-i-na-ble (i-māj'ə-nə-bəl) *adj.* Capable of being conceived of by the imagination. — **i-mag'i-na-bly** *adv.* [*<* NLat. *imago*, *imagin-*, *imago*.] Of or pertaining to an insect image.
i-mag-i-nar-y (i-māj'ə-nēr'ē) *adj.* 1. Existing only in the imagination: UNREAL. 2. *Math.* a. Of, relating to, or being the coefficient of the imaginary unit in a complex number. b. Of, relating to, involving, or being an imaginary number. c. Involving only a complex number of which the real part is zero. — *n., pl. -ies*. *Math.* An imaginary number. — **i-mag'i-nar'i-ly** *adv.* — **i-mag'i-nar'i-ness** *n.*
imaginary number *n.* A complex number in which the real part is zero and the coefficient of the imaginary unit is not zero.
imaginary unit *n.* The positive square root of -1.
i-mag-i-na-tion (i-māj'ə-nā'shan) *n.* 1. a. The power of the mind to form a mental image or concept of something that is unreal or not present. b. Such power of the mind used creatively. 2. The ability to confront and cope with reality by using the creative power of the mind: RESOURCEFULNESS. 3. *Archaic.* a. An unrealistic idea or notion: FANCY. b. A plan or scheme. 4. A traditional or widely held belief or opinion. — **i-mag'i-na-tion-al** *adj.*
 * **syns:** IMAGINATION, IMAGINATIVENESS, FANCY, FANTASY *n. core meaning:* the power of the mind to form images <the writer's lively imagination>
i-mag-i-na-tive (i-māj'ə-nā-tiv, -nā'tiv) *adj.* 1. Having a lively, creative imagination. 2. Inclined to indulge in the fanciful or in make-believe. 3. a. Created by, indicative of, or marked by imagination or creativity. b. False: untrue. — **i-mag'i-na-tive-ly** *adv.* — **i-mag'i-na-tive-ness** *n.*
i-mag-i-ne (i-māj'in) *v., -ined, -in-ing, -ines*. [ME *imaginein* < OFr. *imaginer* < Lat. *imaginari* < *imago*, image.] — *vt.* 1. To form a mental image or picture of. 2. To think: suppose <I imagine they'll all go.> 3. To have a notion without adequate foundation: FANCY <I imagine themselves to be artists>. — *vi.* 1. To use the imagination. 2. To guess: conjecture. — **i-mag'in'er** *n.*
im-a-gism (im'ə-jiz'm) *n.* An early 20th-cent. literary movement that promoted free and precise imagery. — **im'a-gist** *n.* — **im'a-gis'tic** *adj.*
i-ma-go (i-mā'gō, i-mā') *n., pl. -goes or -gi-nes*** (-gō-nēz') [NLat. *imago*, *imagin-* < Lat. image.] 1. An insect in its sexually mature adult stage after metamorphosis. 2. *Psychoanal.* An often idealized image of a person, usu. a parent, formed in childhood and persisting into adulthood.
i-mām (i-mām') *n.* [Ar. *imām*, leader < *amma*, he led.] 1. A prayer leader in a mosque. 2. A Muslim scholar, esp. an authority on Islamic law. 3. **imām**. a. A title accorded to Muhammad and his four immediate successors. b. One of the leaders considered by the Shiites to be

Indians. 2. An implement similar to a tomahawk. — **vt.** **-hawked, -hawk-ing, -hawks.** To strike with a tomahawk.
to-mal-ley (tə-māl'ē, tōm'al'ē) *n.* **pl.** **-leys.** [Of Cariban orig.] The liver of a lobster, esteemed as a culinary delicacy.
Tom and Jer-ry (tōm'ən jēr'ē) *n.* [After *Corinthian Tom and Jerry* Hawthorn, characters in the novel *Life in London* by Pierce Egan (1772–1849).] A hot drink consisting of rum, a beaten egg, milk or water, sugar, and spices.
to-ma-til-lo (tō-mā-tē'yō, -tēl'yō; *n.* **pl.** **-los.** [Am. Sp., dim. of *tomate*, tomato. — see **TOMATO**.] A ground cherry, *Physalis ixocarpa*, native to Mexico and having an edible yellow to purple viscid fruit.
to-ma-to (tə-mā'tō, -mā'tō) *n.* **pl.** **-toes.** [Alteration of Sp. *tomate* < Nahuatl *tomatl*.] 1. A plant, *Lycopersicon esculentum*, native to South America, widely cultivated for its edible, fleshy, usu. red fruit. 2. The fruit of the tomato.
tomb (tōm) *n.* [ME < OFr. *tombe* < Lat. *tumba* < Gk. *tumbos*.] 1. A vault or chamber for burying the dead. 2. A place of burial. 3. A monument commemorating the dead.
tom-bac also **tam-bac** or **tom-back** or **tam-bak** (tōm'bāk') *n.* [Fr. < Du. *tombak* < Malay *témbaga*.] An alloy of copper and zinc, used in making cheap jewelry.
tom-boy (tōm'boi') *n.* A young girl who behaves like a boy.
-tom-boy'ish *adj.*
tomb-stone (tōm'stōn') *n.* A gravestone.
tom-cat (tōm'kāt') *n.* A male cat.
tom-cod (tōm'kōd') *n.* **pl.** **tomcod** or **-cods.** An edible marine fish, *Microgadus tomcod* of the North American Atlantic, or *M. proximus* of the northern Pacific, related to and resembling the cod.
Tom Col-lins (tōm'kōl'inz) *n.* [Tom, a kind of gin + Collins, a name.] A beverage of gin, lemon or lime juice, carbonated water, and sugar.
Tom, Dick, and Har-ry (tōm'dik'ən hār'ē) *n.* Anybody : everyone. "Every Tom, Dick, and Harry came to the reception."
tone (tōm) *n.* [OFr. < Lat. *tonus* < Gk. *tonos* < *temnein*, to cut.] 1. One of the books in a work of several volumes. 2. A large or scholarly book.
-tone *suff.* [NLat. *-tonus* < Gk. *-tonos*, a cutting < *temnein*, to cut.] 1. Part : area : segment < *dermatome* > 2. Cutting instrument < *microtome* >
to-men-tose (tō-mēn'tōs', tō'nān-tōs') *adj.* [NLat. *tomentosus* < Lat. *tomentum*, cushion stuffing.] *Biol.* Covered with short, dense, matted hairs.
to-men-tum (tō-mēn'təm) *n.* **pl.** **-ta** (-tə) [NLat. < Lat., cushion stuffing.] 1. Anat. A network of very small blood vessels passing between the pia mater and cerebral cortex. 2. *Biol.* A covering of closely matted woolly hairs.
tom-fool (tōm'fōol') *n.* [ME *Thome Fole*.] A stupid, foolish person : BLOCKHEAD. — **tom'fool'adi.** — **tom-fool'er-y** *n.*
tom-my (tōm'ē; *n.* **pl.** **-mies.** [Tommy, nickname for Thomas.] *Chiefly Brit.* 1. A loaf or piece of bread. 2. Food : provisions. 3. *often* Tommy. A Tommy Atkins.
Tommy At-kins (āt'kinz) *n.* [From the use of the name on sample forms.] A British soldier.
Tommy gun *n.* Informal. A Thompson submachine gun.
tom-my-rot (tōm'ē-rōt') *n.* [Dial. *tommy*, fool + *ROT*.] Informal. Nonsense.
to-mog-ra-phy (tō-mōg'rā-fē) *n.* [Gk. *tomos*, section (< *temnein*, to cut) + *-GRAPHY*.] A method for making x-ray pictures of a predetermined plane section of a solid object by blurring out the images of other planes. — **to'mo-gram** (tō'mā-grām) *n.* — **to'mo-graph** (grāf') *n.*
to-mor-row (tə-mōr'ō, -mōr'ō) *n.* [ME *to morow* < OE *tō morgenne*, in the morning.] 1. The day following today. 2. The near future. — **adv.** On or for the day following today.
tom-pi-on (tōm'pē-ən) *n.* *var.* of **TAMPION**.
Tom Thumb *n.* 1. A tiny hero of English folklore. 2. A midget.
tom-tit (tōm'tit') *n.* A small bird, as a tit.
tom-tom (tōm'tōm') *n.* [Hindi *tamtam*.] 1. Any of various usu. long narrow small-headed drums beaten with the hands. 2. A gong with a metal disk struck by a felt-covered hammer or stick. 3. A monotonous rhythmic drumbeat or sound similar to it.
-tomy *suff.* [NLat. *-tomia* < Gk. *-tomos*, cutting, sharp < *temnein*, to cut.] Act of cutting : incision < *gastrostomy* >
ton (tūn) *n.* [ME *toun*, a measure of weight < OE *tunne*, large cask.] 1. *a.* A unit of weight equal to 1.016 metric ton, 2,240 pounds, or 1016.06 kilograms. *b.* A unit of weight equal to .907 metric ton, 2,000 pounds, or 907.20 kilograms. *c.* A metric ton. 2. A unit of capacity for cargo in maritime shipping, usu. estimated at 40 cubic feet. 3. A unit of inside capacity of a ship equal to 100 cubic feet. 4. Informal. A very large amount < *a ton of homework* >
to-nal (tō'nāl) *adj.* Of or relating to a tone, tones, or tonality. — **to'nal-ly** *adv.*
to-nal-i-ty (tō-nāl'i-tē) *n.* **pl.** **-ties.** 1. *Mus.* *a.* A system of seven tones built on a tonic key. *b.* Arrangement of all the tones and chords of a musical composition in relation to a tonic. 2. The scheme or interrelation of the color tones in a painting.
tone (tōn) *n.* [ME < Lat. *tonus* < Gk. *tonos*.] 1. *a.* A sound of distinct pitch, quality, or duration. *b.* The quality or character of sound < the

clear tones of a horn > 2. *Mus.* *a.* The interval of a major second. *b.* The characteristic quality or timbre of a specific instrument or voice. 3. The pitch of a word used to determine its meaning or to distinguish differences in meaning. 4. The particular or relative pitch of a word, phrase, or sentence. 5. Manner of expression < a hectoring tone of voice > 6. General quality, effect, or atmosphere < a room decorated in an elegant tone > < an antagonistic tone in the discussion > 7. *a.* A color or shade of color. *b.* Quality of color. 8. *Physiol.* *a.* The tension in resting muscles. *b.* Normal firmness of tissue. — **v.** **toned, ton-ing, tones.** — **vt.** 1. To give a particular tone or inflection to. 2. To soften or change the color of (e.g., a painting or photographic negative). 3. To sound monotonously : *INTONE*. — **vi.** 1. To assume a given color quality. 2. To harmonize in color. — **tone down.** To make less vivid, harsh, or violent : MODERATE < Let's tone down the rhetoric. > — **tone up.** To make or become brighter or more vigorous.

★ **SYNS:** TONE, TIMBRE, TONALITY *n.* *core meaning:* a sound of distinct pitch and quality < the tone of a French horn >

tone arm *n.* The pivoted arm of a record player that holds the cartridge and stylus.

tone color *n.* The timbre of a singing voice or instrument.

tone-deaf (tōn'dēf') *adj.* Unable to distinguish differences in musical pitch.

tone language *n.* A language that distinguishes meanings among words of similar form by variations in pitch and tone.

tone-less (tōn'lis) *adj.* 1. Lacking tone. 2. Devoid of vitality : LIFELess. — **tone'less-ly** *adv.* — **tone'less-ness** *n.*

tone poem *n.* A symphonic poem.

ton-er (tō'nər) *n.* One that tones, as : *a.* A chemical bath used to change the color of a photographic print or to preserve black-and-white prints or movie film. *b.* A powdery ink used to produce an image in laser printers and photocopiers. *c.* A mildly astringent cream or lotion used to refresh the skin.

tong' (tōng, tōng) *vt.* **tonged, tong-ing, tongs.** [Back-formation < *TONGS*.] To seize or manipulate with tongs.

tong' (tōng, tōng) *n.* [Cantonese, assembly hall.] 1. A Chinese association, clan, or fraternity. 2. A Chinese secret society in the United States, at one time believed to control criminal activity among Chinese Americans.

Ton-gan (tōng'gan, tōng'an) *n.* A Polynesian language spoken in Tonga.

tongs (tōngz, tōngz) *pl. n.* [ME < OE *tong*.] (*sing.* or *pl.* in number.) A grasping implement consisting of two arms joined at one end by a pivot or hinge.

tongue (tūng) *n.* [ME < OE *tunge*.] 1. The movable, fleshy muscular organ in the mouth that functions in tasting, speech, and as an aid in chewing and swallowing. 2. The tongue of an animal, as a cow, used as food. 3. A spoken language or dialect < one's native tongue > 4. Style or quality of utterance < your sharp tongue > 5. The flap of material under the laces or buckles of a shoe. 6. A spit of land : PROMONTORY. 7. Something resembling a tongue, as in shape < tongues of flame > 8. A bell clapper. 9. The harnessing pole attached to the front axle of a horse-drawn vehicle. 10. A protruding strip along the edge of a board that fits into a matching groove on the edge of another board. — **v.** **tongued, tongu-ing, tongues.** — **vt.** 1. To separate or articulate (musical notes played on a wind instrument) by shutting off air with the tongue. 2. To lick or touch with the tongue. 3. *a.* To provide (a board) with a tongue. *b.* To join by a tongue and groove. 4. *Archaic.* To scold. — **vi.** 1. To articulate notes on a wind instrument. 2. To project, as a promontory. — **hold (one's) tongue.** To be or keep silent. — **on the tip of (one's) tongue.** On the verge of being recalled or expressed < a name on the tip of my tongue >

tongue and groove *n.* A joint made by fitting a tongue on the edge of a board into a matching groove on another board.

tongue depressor *n.* A thin blade for pressing down the tongue during a medical examination of the mouth and throat : SPATULA.

tongue-fish (tūng'fish') *n.* **pl.** **tonguefish** or **-fish-es.** [From its tongue-shaped body.] Any of various marine flatfishes of the family Cynoglossidae, with the posterior tapering to a point.

tongue-in-cheek (tūng'in-chēk') *adj.* Marked by irony, insincerity, or facetious exaggeration.

tongue-lash-ing (tūng'lāsh'ing) *n.* Informal. A harsh scolding.

tongue-tie (tūng'ti') *n.* Restricted mobility of the tongue resulting from abnormal shortness of the frenum. — **vt.** **-tied, -ty-ing, -ties.** To make tongue-tied.

tongue-tied (tūng'tid') *adj.* 1. Speechless, as from shyness, embarrassment, or astonishment. 2. Afflicted with tongue-tie.

tongue twister *n.* 1. A word or words difficult to articulate rapidly, usu. due to a succession of similar consonantal sounds. 2. A word or expression difficult to pronounce.

-tonia *suff.* [NLat. < *tonus*. — see **TONE**.] Degree or state of tonicity < *myotonia* >

ton-ic (tōn'ik) *n.* [Gk. *tonikos*, capable of extension < *tonos*, tone.] 1. An invigorating, refreshing, or restorative agent. 2. A medicine that restores or increases bodily tone. 3. *Mus.* The first note of a

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